

Remarks

Claims 1-3, 6, 7, 11-15, 18, 19, 23, 24, 32-34, 37, 38, and 42-47 are pending in the subject application. Favorable consideration of the pending claims, in view of the remarks that follow, is earnestly solicited.

Claims 1-3, 6-7, 13-15, 18-19, 32-34, 37-38, and 44-47 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Waldinger *et al.* (NL 1012954, and Maturitas, 2000, vol. 36, pages 165-168), in view of Andrews *et al.* (WO 01/52855). The applicants respectfully traverse this ground for rejection because the cited references, either taken alone or in combination, do not disclose or suggest the current invention, which is a unique and effective treatment for idiopathic hyperhidrosis.

The subject invention advantageously provides treatment for idiopathic hyperhidrosis. Idiopathic hyperhidrosis refers to a medical condition, having no known cause, which is characterized by excessive, uncontrollable perspiration beyond that required to cool the body (see page 4, lines 5-10 of the applicants' specification). Idiopathic hyperhidrosis starts early in life and may present as a continuous disorder.

Idiopathic hyperhidrosis is entirely different from secondary hyperhidrosis. Secondary hyperhidrosis occurs in individuals affected by a primary condition. These primary conditions, such as hyperthyroidism, social anxiety disorder, obesity, and menopause, trigger random hot flushes and/or perspiration bouts. The extent and/or number of such flushes and/or perspiration bouts are typically far less than what is experienced by one suffering from idiopathic hyperhidrosis.

Patients diagnosed with idiopathic hyperhidrosis exhibit a relatively continuous problem and a particular associated sweating pattern (*i.e.* palms of hands, feet, as described in the instant application at p. 4, lines 9-10). In contrast, hot flushes are periodic episodes stemming from unique stimuli and are typically localized to face, neck, and underarm regions.

Thus, idiopathic hyperhidrosis has a different etiology and different symptoms from secondary hyperhidrosis. There is no basis for expecting that a treatment for one of these conditions would be useful in treating the other.

The current invention pertains to the use of compounds that affect the activity of a specific member of the serotonin receptor family - 5-HT<sub>2C</sub>. The serotonin family of receptors is encoded by separate genes, coupled to distinct secondary messenger pathways, and exhibit different pharmacological characteristics. The claimed invention is a unique method that specifically targets the 5-HT<sub>2C</sub> serotonin receptor to treat idiopathic hyperhidrosis.

Waldinger *et al.* teach the use of mirtazapine to target 5-HT<sub>2A</sub> (not 5-HT<sub>2C</sub>) in treating hot flushes (and associated symptoms such as night sweats) in patients with secondary hyperhidrosis resulting from decreased testosterone/estrogen levels. Thus, Waldinger *et al.* are targeting an entirely different receptor than that which is targeted by the method of the current invention, and they are treating an entirely different condition. There would be no reason for the skilled artisan to modify the teachings of Waldinger *et al.* to arrive at the current invention.

It is well established in the patent law that the mere fact that the purported prior art could have been modified or applied in some manner to yield an applicant's invention does not make the modification or application obvious unless "there was an apparent reason to combine the known elements in the fashion claimed" by the applicant. *KSR International Co. v. Teleflex Inc.*, 550 U.S. \_\_\_\_ (2007). Furthermore, an applicant's invention is not "proved obvious merely by demonstrating that each of its elements was, independently, known in the (purported) prior art." *Id.*

Thus, in addition to the different etiologies of the conditions being treated, the Waldinger *et al.* treatments focus on a different member of the serotonin receptor family. As noted above, the serotonin receptor family consists of pharmacologically distinct proteins operating in diverse messenger pathways. There is no apparent reason why one of skill in the art would modify the teachings of Waldinger *et al.* to target a different receptor in order to treat a different condition.

The deficiencies of the Waldinger *et al.* reference with respect to the current invention are not cured, or even addressed, by the secondary reference. Andrews *et al.* do not disclose or suggest administering a 5-HT<sub>2C</sub> activity affecting compound to patients diagnosed with idiopathic hyperhidrosis. Further, there is no indication in the Andrews *et al.* reference that a 5-HT<sub>2C</sub> activity-affecting compound produces, or should produce, a therapeutic effect in patients where

testosterone/estrogen hormone levels are normal, but who have been diagnosed with idiopathic hyperhidrosis.

The Court of Customs and Patent Appeals was faced with an analogous situation in *In re Hayashibara and Sugimoto*, 188 USPQ 4 (CCPA 1975). The PTO Board of Appeals had affirmed a §103 rejection, and the CCPA reversed, stating:

Turning to the . . . rejection . . . for obviousness under 103, we agree with appellants that there is nothing in the reference which would lead those of ordinary skill in the art to employ [the substance] as appellants do in the product of claim 11. The reference does not teach [the substance] as possessing any of the characteristics or functions upon which appellants' claimed invention depends (emphasis added).

As discussed above, the cited references, either taken alone or in combination, do not provide any teachings that would lead one of skill in the art to the current applicants' unique and advantageous treatment for idiopathic hyperhidrosis. Accordingly, the applicants respectfully request reconsideration and withdrawal of the obviousness rejection under 35 U.S.C. §103 based on *Waldinger et al.* in view of *Andrews et al.*

Claims 1-3, 6-7, 13-15, 18-19, 32-34, 37-38, 44-47 have been rejected under 35 U.S.C. 103(a) as being unpatentable over *Waldinger et al.* (NL 1012954, and *Maturitas*, 2000, vol. 36, pages 165-168), in view of *Davidson et al.* (IDS), and further in view of *Andrews et al.* (WO 01/52855). The applicants respectfully traverse this ground for rejection because the cited references, either taken alone or in combination, do not disclose or suggest the current invention.

The deficiencies of the *Waldinger et al.* references as well as the *Andrews et al.* reference have been noted above. These deficiencies are not cured by the *Davidson et al.* reference.

*Davidson et al.* teach the use of fluoxetine, an antidepressant and serotonin antagonist, in treating patients with social anxiety disorders. The *Davidson et al.* reference fails to teach or suggest methods for treating idiopathic hyperhidrosis. The hyperhidrosis at issue in the *Davidson et al.* reference was associated with higher levels of disability, fear, and avoidance. Patients suffering from social anxiety disorders exhibit a different etiology of hyperhidrosis than patients diagnosed with idiopathic hyperhidrosis. The hyperhidrosis occurring in patients with social anxiety disorder stems from a distinct cause differing from idiopathic hyperhidrosis.

Nothing in these references would lead the skilled artisan to the applicants' claimed method for treating idiopathic hyperhidrosis. Accordingly, the applicants respectfully request reconsideration and withdrawal of the obviousness rejection under 35 U.S.C. §103 based on Waldinger *et al.* in view of Davidson *et al.* and further in view of Andrews *et al.*

Claims 11, 12, 23, 24, 42, and 43 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Waldinger *et al.* (NL 1012954, and Maturitas, 2000, vol. 36, pages 165-168), in view of Andrews *et al.* (WO 01/52855), and further in view of Saadia *et al.* (IDS). The applicants respectfully traverse this ground for rejection because the cited references, either taken alone or in combination, do not disclose or suggest the current invention.

The shortcomings of the Waldinger *et al.* and Andrews *et al.* references with respect to the current invention have been discussed above. These shortcomings are not cured, or even addressed, by Saadia *et al.* The Saadia *et al.* reference merely describes the use of intradermal botulinum injection in treating sweating.

As the CAFC has established, an invention will not be rendered obvious merely by combining teachings found in the prior art. *ACS Hospital Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). There must be some suggestion or incentive in the prior art to make the combination. *Id.* Also, the prior art must suggest that this combination would have a reasonable likelihood of success. *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). The suggestion to make the combination and likely success may not be gleaned from the applicant's disclosure. *Id.*

As with the Andrews *et al.* reference, the Saadia *et al.* reference fails to teach the use of a 5-HT<sub>2C</sub> activity affecting compound, such as mirtazapine, in treating idiopathic hyperhidrosis. Thus, the deficiencies of the Waldinger *et al.* and Andrews *et al.* references are not cured by Saadia *et al.* Accordingly, the applicants respectfully request reconsideration and withdrawal of the obviousness rejection under 35 U.S.C. §103 based on Waldinger *et al.* and Andrews *et al.* in view of Saadia *et al.*

Claims 11, 12, 23, 24, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waldinger *et al.* (NL 1012954, and Maturitas, 2000, vol. 36, pages 165-168), in view of Davidson *et al.* (IDS), and further in view of Andrews *et al.* (WO 01/52855), and further in view of

Saadia *et al.* (IDS). The applicants respectfully traverse this ground for rejection because the cited references, either taken alone or in combination, do not disclose or suggest the current invention.

As described in detail above, none of those references describe the use of 5-HT<sub>2C</sub> activity affecting compounds, such as mirtazapine, in treating idiopathic hyperhidrosis or in prophylactically treating sweating associated with idiopathic hyperhidrosis. Because the deficiencies of the Waldinger *et al.* references are not cured by Davidson *et al.*, Andrews *et al.*, or Saadia *et al.*, whether alone or in combination, a finding of obviousness is not proper.

“That the claimed invention may employ known principles does not itself establish that the invention would have been obvious.” *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 488-89 (Fed. Cir. 1984) (indicating that a combination of known elements is nonobvious if the elements resolve different problems). None of the prior art references discloses a treatment for idiopathic hyperhidrosis. There is no suggestion or motivation to apply any of the teachings, alone or in combination, to the physiologically distinctive condition of idiopathic hyperhidrosis. Rather, the prior art focused on the treatment of different conditions by modulating a different receptor.

Without the benefit of the current applicants’ disclosure, the subject invention would not be obvious. Furthermore, the long-felt need for a treatment for this extremely disconcerting disorder only underscores the distinctiveness of the applicant’s invention. Accordingly, the applicants respectfully request reconsideration and withdrawal of the obviousness rejection under 35 U.S.C. §103 based on Waldinger *et al.* in view of Davidson *et al.*, and further in view of Andrews *et al.* and further in view of Saadia *et al.*

In view of the foregoing remarks and the amendments above, the applicants believe that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

The applicants also invite the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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